

KESSLER, I.N., inzh.; ROVBYN, A.I., inzh.

Machine for making glazier's paste and putty. Suggested by
I.N.Kessler, A.I.Rovin. Rats.i izobr.predl.v stroi. no.12:
42-44 '59. (MIRA 13:5)

1. Stroitel'no-montazhnyy trest Bazstroy Sverdlovskogo
sovnarkhoza, Krasnotur'insk, Sverdlovskoy oblasti.
(Putty)

ROVICH, Ya.

A book on world shipping: "World's sea lanes and shipping." S.A. Vyshnopol'skii. Reviewed by IA. Rovich. Mor. flot 15 no. 4:31-32 Ap '55. (Shipping) (Vyshnopol'skii, S.A.) (MIRA 8:5)

RUMANIA

STOIA, I., MD; CIVICA, D., MD; ROVINESCU, I., MD.

Methodology Center for Rheumatology, Bucharest (Centrul
metodologic de reumatologie, Bucuresti) - (for all)

Bucharest, Viata Medicala, No 1, 1 Jan 63, pp 39-43

"Remarks on a Case of Pneumonic Hypertrophic Osteoarthropathy."

1. ROVINOVICH, Ye. Ya.; SNEGIREVA, T. D.: TESNER, F. A.
2. USSR (600)
4. Cracking Process
7. Specific catalytic activity of carbon. Dokl.AN SSSR, 88 no. 1, 1953.
9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

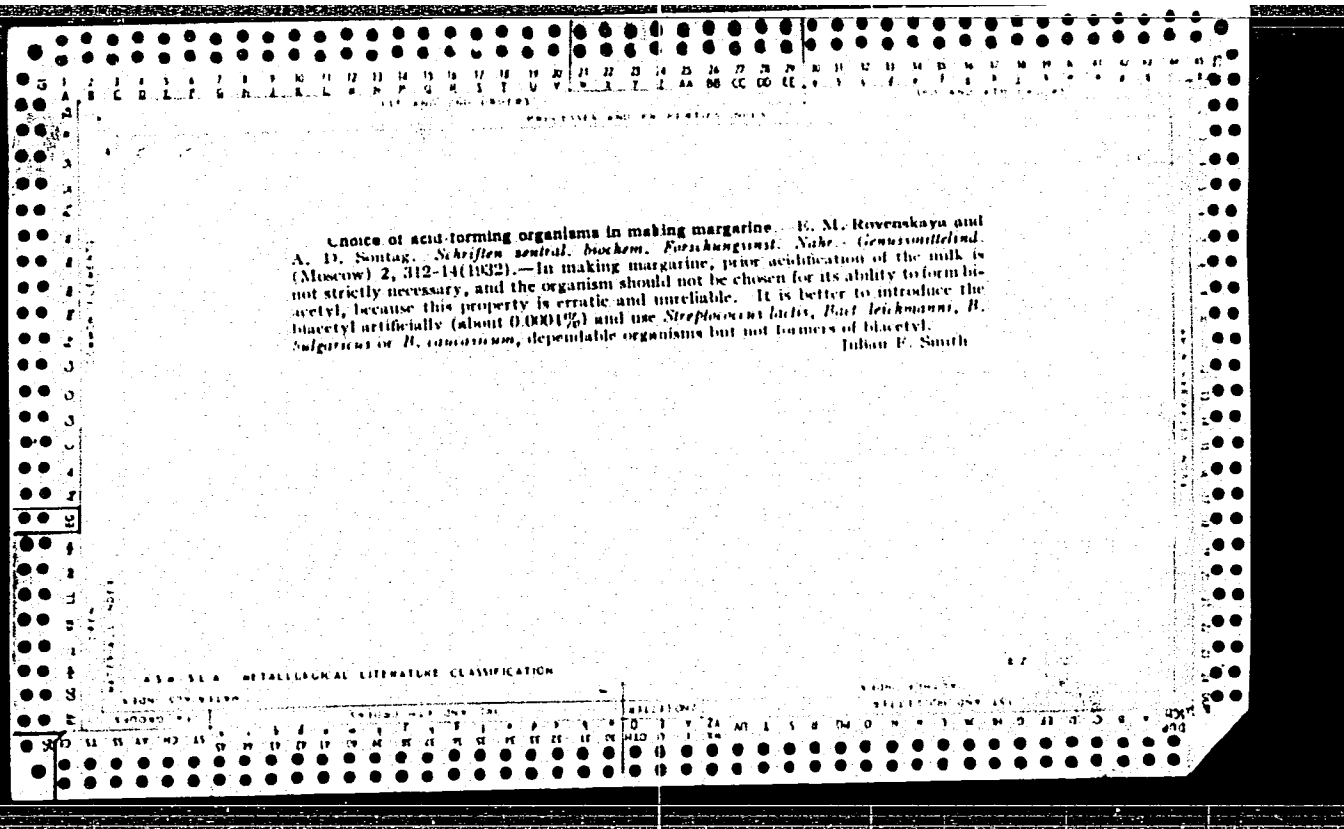
1ST AND 2ND ORDERS																										3RD AND 4TH ORDERS																									
PROCESSES AND PROPERTIES INDEX																										CHEMICAL VARIABLES INDEX																									
<p><i>M</i></p> <p>*Determination of Traces of Aluminium with Aluminon. I. M. Kulberg and E. I. Royinskaya (<i>Zavod. Lab.</i>, 1940, 9, 145-146; <i>Brit. Chem. Abs.</i>, 1942, [A 1], 310).—[In Russian.] 10^{-4}–10^{-5} g. of Al can be determined in the presence of <4 mg. of Ca, <0.5 mg. of Mg, $<2 \times 10^{-5}$ g. of Cu, Mn, and Zn, and <3 mg. of PO_4^{3-}, if the solution contains also 0.5–2 mg. of Fe^{3+}. Al + Fe are precipitated with 8-hydroxyquinoline in dil. CH_3COOH at 50° C., and the precipitate is transformed into chlorides and extracted with 50% KCNS and $(\text{C}_2\text{H}_5)_2\text{O}$. The residue is transformed into Al aurintricarboxylate and the colour intensity measured with a photo-cell using a green filter, since the absorption maximum of the salt is 630 mμ.</p> <p><i>11</i></p>																																																			
<p>ASAC-SLA METALLURGICAL LITERATURE CLASSIFICATION</p>																																																			

PROCESSING AND PROPERTY INDEX																									
1ST AND 2ND CODES													100 AND 101 CODES												
<p><i>12</i></p> <p>Determination of traces of aluminum with the aid of aluminon. L. M. Kul'berg and E. I. Rovinskaya. <i>Zhurnal Khim. 9, 115-9 (1940).</i>—A photometric method is described for detg. traces of Al (1-10 γ). The Al is pptd. with hydroxyquinoline and the quinolate is destroyed by dissolving in HNO_3 followed by evapn. and ignition. If any Fe is pptd. it is extd. with KCNS and ether. To 4-5 ml. of the aq. soln. contg. the Al add 2 ml. of 1.5 N HCl, 1 ml. of 5 N NH_4OAc, dil. with water to 9 ml., mix thoroughly and add 1 ml. of 0.1% aq. soln. of aluminon. Heat to 80° for 10 min. and allow to cool for 30 min. to develop the color more completely. Measure the color against a compensating soln. obtained in making a blank detn. for Al.</p> <p style="text-align: right;">B. Z. Kamich</p>																									
<p>ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION</p> <p>2-2</p>																									

11

***Determination of Traces of Aluminium with Aluminon.** I. M. Kulberg and E. I. Rovinskaya (Zavod. Lab., 1940, 8, 145-148; Brit. Chem. Abs., 1943, [A 1], 310). — [In Russian.] 10^{-4} – 10^{-5} g. of Al can be determined in the presence of < 4 mg. of Cu, < 0.5 mg. of Mg, $< 2 \times 10^{-4}$ g. of Cu, Mn, and Zn, and < 3 mg. of PO_4^{3-} , if the solution contains also 0.5–2 mg. of Fe^{3+} . Al + Fe are precipitated with 8-hydroxyquinoline in dil. CH_3COOH at 50°C , and the precipitate is transformed into chlorides and extracted with 50% KCN and $(\text{C}_2\text{H}_5)_3\text{O}$. The residue is transformed into Al aurintricarboxylate and the colour intensity measured with a photo-cell using a green filter, since the absorption maximum of the salt is 630 m μ .

AS 55.4 METALLURGICAL LITERATURE CLASSIFICATION



ROVINSKAYA, P. YE.

USSR/Medicine - Gynecology
Medicine - Aloe, Effects

Jan/Feb 49

PA 42/49748
"The Use of Extracts of Aloe Leaves in the Treatment of Gynecologic Inflammatory Diseases," P. Ye. Rovinskaya, Cand Med Sci, First Obstet and Gynecol Clinic, Odessa Med Inst, 1 1/2 pp

"Arusher i Ginekol" No 1

Experiments conducted in 1948 showed possibility of skin graft in treating certain gynecologic inflammatory diseases. Filatov, Father of skin-graft technique, claims that certain active agents bring about the "taking hold" of the graft. Active substance can be produced either by animal or plant cells. Successful experiments have shown

42/49748

USSR/Medicine - Gynecology (Contd)

Jan/Feb 49

that aloe leaf extract is a satisfactory substance for completing a graft.

42/49748

KOGANOVSKIY, A.M.; ROVINSKAYA, T.M.; TARAN, P.M.

~~Pyrolysis of thiosulfates~~
Oxidation of thiosulfate and sulfide in aqueous solutions c
neration in the presence of pyrolusite. Ukr. khim. zhur. 23 10:6:
257-265 '57. (MIRA 10:6)

1. Institut obshchey i neorganicheskoy khimii Akademii nauk U.S.S.R.
(Oxidation) (Sulfides) (Thiosulfates)

IVANOV, Ivan Dmitriyevich, kand. ekon. nauk; ROVINSKAYA, Ye.,
red.; SELEZNEVA, R., mlad. red.; MOSKVINA, R., tekhn.
red.

["Common Market" and the competition of the two systems]
"Obshchii rynok" i sorevnovanie dvukh sistem. Moskva,
Sotsekgiz, 1963. 110 p. (MIRA 17:1)
(European Economic Community)
(Competition, International)

ROVINSKIY, A.S.; EL'KIN, I.A.

Thermal system TA-1 for the peeling of potatoes. Kons. i ov.
prom. no.7:4-7 JI '63. (MIRA 16:9)

1. Khar'kovskoye opytno-konstruktorskoye byuro torevogo ma-
shinostroyeniya.

FASTOVSKIY, V.G., doktor tekhn. nauk, prof.; ROVINSKIY, A.Ye.;
PETROVSKIY, Yu.V.; PANASENKOVA, Ye.I., red.

[Inert gases] Inertnye gazy. Moskva, Atomizdat, 1964.
302 p. (MIRA 17:12)

ROVINSKIY, A. Ye.

Oct 49

USSR/Engineering - Gas Analysis
Thermal Conductivity

"Analysis of Gaseous Mixtures by Measuring the Thermal Conductivity," V. G. Fastovskiy,
A. Ye. Rovinskiy, All-Union Elec Eng Inst, 4 1/4 pp

"Zavod Lab" Vol XV, No 10

Describes apparatus for gas analysis based on measurement of electrical resistance of metallic wire placed in gaseous medium. Apparatus was developed by authors in Lab of Rare Gases of above institute. (For details of process itself, see A. Eyken, "Physicochemical Analysis in Production," United Sci and Tech Publishers [ONTI], 1936.) Analysis procedure takes 2-3 min with 100-200 ml expenditure of gas. Recording is automatic. Gives examples of analyses for argon-nitrogen, hydrogen-nitrogen, helium-nitrogen, and hydrogen-argon systems using calibrated curves.

PA 152T13

ROVINSKIY, A. Ye.

Continuous analysis of ozone in gas mixtures by means of an ultraviolet photoelectric colorimeter. V. G. Fastovskii and A. E. Rovinskii. *Zh. Priklad. Khim.* 21, 1030-2 (1955).
 —Based on the fact that O_3 absorbs ultraviolet light, 2500-2480 Å, the following method of analysis was developed. A stream of gas contg. O_3 (up to 0.8%) is passed through a cuvette, then through a plug of pyrolusite removing all of the O_3 , and through another identical cuvette. Both are illuminated by the same Hg source (93% 2537 Å.) and the difference of elec. current produced by identical photoelements is amplified and recorded. Sketches of the app. and amplification circuit are shown. I. Bencowitz

(2)

BDW

MA

224

Rovinskiy, A. Ye.

V 1540. Distillation method for determination of small amounts of impurities in gases. V. G. Pavlovskii, A. R. Rovinskiy and A. A. Vlasovs. Zashch. Lab., 1955, 21 (10), 1158-1160. An apparatus involving condensation and evaporation of gases is described; contents are found from pressure readings. It is suitable for determining the purity of krypton. G. S. Smith

CH (2)

RM
SL

4
6
0
0

FASTOVSKIY, V.G., doktor tekhnicheskikh nauk; ROVINSKIY, A.Ye.,
kandidat tekhnicheskikh nauk.

Improving the cooling of mercury-arc rectifiers. Vest.elektroprom.
27 no.6:56-59 Je '56. (MLRA 10:8)

1.Vsesoyuznyy elektrotekhnicheskiy institut imeni Lenina.
(Mercury-arc rectifiers)

ROVINSKIY, A.Ye.

USSR/Chemical Technology. Chemical Products and Their
Application. Preparation and separation of gases.

I-10

Abs Jour : Referat Zhur- Khimiya, No 4, 1957, 12716

Author : Fastovskiy V.G., Rovinskiy A.Ye.

Title : Preparation of Ozone by Silent Electric Discharge

Orig Pub : Zh. prokl. khimii, 1956, 29, No 9, 1309-1315

Abstract : Experimental investigation of the process of formation of ozone (I) in tubular, glass ozone generators (diameter of inner electrode 51 mm, average width of discharge gap 3.2 mm). Determined were the contents of I in dry O₂ and air, on inner electrode voltage of $U = 8 \div 12.5$ Kv and exposure τ up to 125 seconds. It was found that the process of ozone generation is defined by a kinetic equation derived on the assumption that rate of formation of I is constant while rate of decomposition of I is proportional to its concentration. Given are the values of maximal concentrations of I and constants of the kinetic equation

Card 1/2

- 147 -

USSR/Chemical Technology. Chemical Products and Their
Application. Preparation and separation of gases.

I-10

USSR/Fluid Mechanics

Abs Jour: Ref Zhur Mekhanika, No 8, 1957; 9090

Abstract: of the experiments showed that all the experimental points fall on a curve constructed in accordance with the formula of M. A. Mikheyev (Izv. AN SSSR, Otd. tekhn. n., 1952, No 10), which was obtained for turbulent flow through a straight tube, with an accuracy of 10 percent. The effect of the length of the tube on the heat output, in the investigated range of ratios of the length of tube to its diameter was not determined. The results of experiments in hydraulic resistance showed that, beginning with Reynolds Numbers equal to 200, the experimental points regularly deviate from relationships characteristic for laminar flow in a straight tube, and do not exhibit a clearly defined discontinuity in the trans-

Card 2/3

Abstract: ition into a turbulent condition flow.

AUTHOR: ³⁹⁴Fastovskiy, V.G., Professor, Doctor of Technical Sciences, and Rovinskiy, A.E., Candidate of Technical Sciences.

TITLE: Evaporative cooling of mercury arc rectifiers. (Ispanitel' noye okhlazhdeniye rtutnykh vypryamiteley.)

PERIODICAL: "Vestnik Elektropromyshlennosti" (Journal of the Electrical Industry) 1957, Vol. 28, No. 4, pp. 50 - 51 (U.S.S.R.)

ABSTRACT: At the present time mercury arc rectifiers are cooled by liquid circulating in a closed circuit with a circulating pump and heat exchanger. The most widely used heat transfer medium is transformer oil. Although it is a good insulator, transformer oil has the disadvantage of high viscosity and a low rate of heat transfer. Other fluids have been used but the complicated system is still required and therefore the system of evaporative cooling is of interest.

When evaporative cooling is used the body of the rectifier is surrounded by liquid which boils. The hot vapours pass through a pipe to a surface condenser and the condensate passes through another pipe to the bottom of the rectifier. The advantages of the system are that the heat transfer rate is high; the vapourisation temperature is constant so long as the pressure in the vapour space is constant; the condenser is small; natural circulation can be maintained in the hermetically-sealed system.

A high voltage mercury arc rectifier operates with a wall temperature of 20 - 24 °C and it is therefore necessary to

L 32658-65 EWT(m)/EPF(c)/EFF(n)-2/EWP(t)/T/EPR/EWP(b) Pr-4/Ps-4/Pu-4

IJP(c) JD

ACCESSION NR: AP5005564

S/0080/65/038/002/0328/0335

AUTHOR: Rovinskiy, A. Ye.; Fastovskiy, V. G.; Kosova, Z. N.

TITLE: Adsorption of rare gases⁷¹ and their accompanying gases synthetic zeolites⁷

SOURCE: Zhurnal prikladnoy khimii, v. 38, no. 2, 1965, 328-335

TOPIC TAGS: synthetic zeolite, rare gas, gas chromatography, gas adsorption, argon purification, adsorption isotherm, molecular sieve

ABSTRACT: The adsorption of helium, neon, argon, krypton, xenon, nitrogen, and oxygen was studied at temperatures corresponding to commercial conditions with synthetic zeolites and a technique and pilot apparatus were developed for separating argon-oxygen mixtures by a method originally proposed by Johnes (Am. Pat. 2810545; 10, 22, 1957). The study covered granulated type NaA and CaA zeolites from the Groznenskiy neftyanny institut (Groznyy petroleum institute) and molecular sieve Linde 4A used originally for the oxygen-argon separation. A laboratory type adsorber was used for measuring the adsorption isotherms of pure gases and for the preliminary tests with argon-oxygen and argon-oxygen-nitrogen model mixtures, and a pilot adsorber permitting the alternate flow of gas through columns and the thermal regeneration of adsorbent was employed for the pilot tests. Adsorption of

Card 1/2

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ACCESSION NR: AP5005564

approximately 5-10% oxygen from its mixtures with argon at 90K on zeolite type NaA showed the possible purification of argon to a level of 0.004 vol% O₂. The purification decreased slightly with a reduction in contact time. Admixture of nitrogen suppressed the oxygen adsorption. Zeolite CaA was shown to be applicable for separating neon-helium mixtures at 78K, the adsorption of neon being higher and that of helium lower than on activated charcoal Ag-2. The technological advantages of separating argon-oxygen with the described apparatus are outlined. Orig. art. has: 8 figures and 2 tables.

ASSOCIATION: None

SUBMITTED: 04Feb63

ENCL: 00

SUB CODE: IC

NO REF SOV: 004

OTHER: 006

Card 2/2

ROVINSKIY, A. Ye.

PHASE I BOOK EXPLOITATION

1170

Vsesoyuznyy elektrotekhnicheskii institut

Nizkiye temperatury i redkiye gazy (Low Temperatures and Rare Gases)
Moscow, Gosenergoizdat, 1958. 286 p. (Series: Its: Trudy, vyp. 61)
2,260 copies printed.

Ed. (title page): Fastovskiy, V.G.; Doctor of Technical Sciences; Ed. (inside book): Zhigarev, A.A.; Tech. Ed.: Larionov, G. Ye. Editorial Board of Series: Andrianov, K.A., Biryukov, V.G. (chief ed.), Butkevich, G.V. (deputy chief ed.); Granovskiy, V.I., Kalitvyanskiy, V.I., Timofeyev, P.V., Fastovskiy, V.G., Shemayev, A.M.

PURPOSE: This book is intended for scientists and technicians concerned with storing, handling, obtaining and utilizing atmospheric gases (especially oxygen and rare gases).

COVERAGE: The volume is one of a series published by the All-Union Electrical Engineering Institute imeni V. I. Lenin. The Collection includes main projects carried out during the period 1947-1955 by scientists and technicians of the Low-temperature Laboratory headed by Doctor of Technical Sciences, Professor

Card 1/5

1170

Low Temperatures and Rare Gases

Fastovskiy, V.G. and Rovinskiy, A.Ye. The Adsorption Method of Separating Neon-Helium Mixture 67

Fastovskiy, V.G. and Petrovskiy, Yu.V. Investigating Phase Equilibrium of Liquified Gases 99

Fastovskiy, V.G. and Petrovskiy, Yu.V. Investigating Liquid and Vapor Equilibrium in the System Oxygen-Argon-Nitrogen 116

Fastovskiy, V.G. and Petrovskiy, Yu.V. The Influence of Argon on the Air Rectification Process 123

Fastovskiy, V.G. and Petrovskiy, Yu.V. Several Questions on the Technical Preparation of Argon 139

Fastovskiy, V.G. and Petrovskiy, Yu.V. Research on the Industrial Preparation of Krypton 154

Card 3/5

Low Temperatures and Rare Gases	1170
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Fastovskiy, V.G., <u>Rovinskiy, A.Ye.</u> , and Petrovskiy, Yu.V. Obtaining Pure Xenon	174
<u>Rovinskiy, A.Ye.</u> and Vlasova, A.A., Senior Technician, Engineer. Removal of Oxygen From Inert Gases	185
Fastovskiy, V.G. and <u>Rovinskiy, A.Ye.</u> Gas Analysis	195
Petrovskiy, Yu.V. Small-scale Apparatus for Preparing Liquid Air	220
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Fastovskiy, V.G. and <u>Rovinskiy, A.Ye.</u> Intensification of the Cooling of High-voltage Mercury Arc Rectifiers	242

Card 4/5

Low Temperature and Rare Gases

1170

Fastovskiy, V.G. and Rovinskiy, A.Ye. Investigation of Heat Emission in
a Spiral Channel

255

Fastovskiy, V.G. and Rovinskiy, A.Ye. Experimental Investigation of
Columns With Multi - Layered Netted Fittings

264

AVAILABLE: Library of Congress

Card 5/5

TM/gmp
1-18-59

Rovinskiy, A. Ye.

AUTHOR: Rovinskiy, A. Ye., Candidate of Technical Sciences 67-58-2-12/26

TITLE: Means and Ways of Automatizing the Purification Process of Inert Gases (Puti avtomatizatsii protsessa ochistki inertnykh gazov)

PERIODICAL: Kislород, 1958, Nr 2, pp. 51-53 (USSR)

ABSTRACT: Purification of inert gases is at present being carried out in the USSR by the method of surplus hydrogen. This surplus is kept within the prescribed limits by means of a thermal conduction gas analyzer, which is brought about by the action of the hydrogen content upon a dosage valve of the contact apparatus (2). By using a special indicator the process of purifying these gases can be carried out in exact accordance with the predetermined ratio. In the present instance, a filter cartridge with a mixture of cupric oxide and active copper is used at the output of the contact apparatus for the absorption of the remaining content of oxygen or hydrogen. On the basis of an illustration the scheme of the purifying plant for inert gases without a surplus of hydrogen is described. As indicator, a thermal analyzer is used which operates according to the principle of the recording of reaction heat.

Card 1/2

Means and Ways of Automatizing the Purification
Process of Inert Gases

67-58-2-12/26

A second scheme of a similar apparatus is based upon the fact that in stabilized currents of crude gas and hydrogen before the contact apparatus a constant concentration of the oxygen content in the crude gas is maintained by automatically feeding pure gas (4). Also this apparatus is described according to the block scheme. An additional regulator attached to the hydrogen valve serves the purpose of adapting the consumption of hydrogen to the consumption of pure gas. There are 2 figures, and 4 references, 2 of which are Soviet.

AVAILABLE: Library of Congress

1. Gases--Inert--Purification
2. Hydrogen--Applications
3. Laboratory equipment--Applications

Card 2/2

Rovinskiy, A. Ye.

96-58-2-17/23

AUTHORS: Fastovskiy, V.G., Doctor of Technical Sciences,
Artym, R.I., Engineer and Rovinskiy, A.Ye., Candidate of
Technical Sciences

TITLE: The Boiling of Freon-11, Methylene Chloride and Benzene on
a Horizontal Tube (Kipeniye freona-11, khloristogo metilena
i benzola na gorizontal'noy trube)

PERIODICAL: Teploenergetika, 1958, No 2, pp 77 - 80 (USSR)

ABSTRACT: The boiling equipment for these tests, which is illus-
trated in Fig.1, consisted of a steel tube 170 mm diameter and
280 mm long, closed at the ends and enclosing a thick-walled,
German-silver tube 8 mm diameter and 200 mm long, heated by
electric current. The evaporated vapour was condensed and
returned to the main tube. The thermal loading of the heating
surface was determined from the electrical power consumed;
temperatures were measured by thermocouples at appropriate places.
The substances tested were chemically pure methylene chloride
and nominally pure Freon-11 and benzene. Measurements of the
boiling points of these liquids at atmospheric pressure showed
that the Freon-11 and benzene were also comparatively pure. At
the start of tests, the liquid was boiled for some hours to
remove gases from it and the equipment. The heating tube surface
became contaminated and was cleaned from time to time.

Card 1/3

96-58-2-17/23

The Boiling of Freon-11, Methylene Chloride and Benzene on a Horizontal Tube

In the region of well-developed boiling, the experimental data are correctly represented by the equation:

$$\alpha = Aq^n$$

which is valid when q is greater than 6 000 kcal/m²hour for CCl₃F and q is greater than 12 000 kcal/m²hour for CH₂Cl₂ and C₆H₆. The values of the constants in this formula are tabulated. The experimental results are also plotted in Fig.2, which clearly indicates the commencement of bubble formation. The test results in terms of the criterial relationship of Kruzhilin are graphed in Fig.3. It is noticeable that although the physical properties of Freon-11 do not differ much from those of the other liquids used, yet its heat-transfer coefficients on boiling are much higher at the same thermal loads. The article then discusses bubble formation during different phases of boiling and relates the results to the work of other authors. There are 3 figures and 11 references, 4 of which are Russian, 4 English, 2 German and 1 Japanese.

Card2/3

96-58- 1-11/23
The Boiling of Freon-11, Methylene Chloride and Benzene in a
Horizontal Tube

ASSOCIATION: All-Union Electrotechnical Institute
(Vsesoyuznyy elektrotekhnicheskiy institut)

AVAILABLE: Library of Congress
Card 3/3

1. Methylene chloride-Boiling
2. Benzene-Boiling
3. Freon-Boiling
4. Heating elements-Applications

FASTOVSKIY, V.G.; ROVINSKIY, A.Ye.

Investigating the adsorption of rare and associated gases.
Trudy VNI no.61:48-66 '58. (MIRA 11:7)
(Adsorption) (Gases, Rare)

FASTOVSKIY, V.G.; ROVINSKIY, A.Ye.

Adsorption method of separating a neon and helium mixture.
Trudy VNI no.61:67-98 '58. (MIRA 11:7)
(Adsorption) (Neon) (Helium)

FASTOVSKIY, V.G.; ROVINSKIY, A.Ye.; PETROVSKIY, Yu.V.

Production of pure xenon. Trudy VNI no.61:174-184 '58. (MIRA 11:7)
(Xenon)

ROVINSKIY, A.Ye.; VLASOVA, A.A.

Removing oxygen from inert gases. Trudy VFI no.61:185-194 '58.
(MIRA 11:7)

(Gases, Rare) (Oxygen)

ROVINSKIY, A.Ye.; VLASOVA, A.A.

Producing ozone by silent electric discharges. Trudy VEI no.61:232-241
'58. (MIRA 11:6)

(Ozone)

FASTOVSKIY, V.G.; ROVINSKIY, A.Ye.

Intensifying the cooling of high-voltage mercury rectifiers.

Trudy VBI no.61:242-254 '58.

(MIRA 11:6)

(Mercury-arc rectifiers)

14(1)
AUTHOR: Sov/67-59-3-14/27
Rovinskiy, A. Ye., Candidate of Technical Sciences
TITLE: Purification of Gases From Oxygen by Means of Manganese Protoxide
(Ochistki gazov ot kisloroda zakis'yu margantsa)
PERIODICAL: Kislorod, 1959, Nr 3, p 49 (USSR)
ABSTRACT: Under this title the abstracter who is mentioned above as the
author briefly deals with the British patent Nr 757037 "Im-
provements in or Relating to the Purification of Gases or Gas
Mixtures" by Cockett A. H., from September 12, 1956. There is
1 figure.

Card 1/1

14(1)

AUTHOR:

Rovinskiy, A. Ye., Candidate of Technical Sciences

SOV/67-59-3-18/27

TITLE:

Production of Oxygen by Means of Chromium Oxides
(Polucheniye kislороda s pomoshch'yu okislov khroma)

PERIODICAL:

Kislород , 1959, Nr 3, p 50 (USSR)

ABSTRACT:

In this paper the American patent (USA) Nr 2783134 "Process for the Production of Oxygen" by Houghes, E. C. Heights, S. and Strecker, A.A. from February 26, 1957, is briefly discussed by the abstracter whose name is given as the author.

Card 1/1

Rovinskiy, A. Ye.

S/064/60/000/004/003/006
B015/B060

AUTHORS: Pastovskiy, V. G., Rovinskiy, A. Ye.
TITLE: Adsorption Method of Separating a Krypton - Xenon Mixture
PERIODICAL: Khimicheskaya promyshlennost', 1960, No. 4, pp. 41-46

TEXT: The authors worked out an adsorption method of separating a krypton - xenon mixture on an industrial scale. Experiments on the adsorption of the individual gases were conducted by means of a device and a method used in previous experiments with АГ-2 (AG-2) coal (Ref. 2). They showed the similarity in the adsorption capacity of the two coal types AG-2 and АГ-3 (AG-3) with respect to Kr and X, and the adsorbed amount can thus be calculated from the same interpolation equations. The adsorption of the xenon - krypton mixture was tested on an appropriate plant (Fig. 3), and it was found (Table 1, Figs. 4, 5) that a 75-80% xenon concentration was attained at -60°C and a total pressure of 760 torr with a single adsorption in equilibrium. The fact is that the adsorption of krypton is strongly suppressed in the presence of xenon. ✓

Card 1/2

Adsorption Method of Separating a Krypton -
Xenon Mixture

S/064/60/000/004/003/006
B015/B060

A variation in temperature does not considerably influence adsorption, i.e., the efficacy of separation so that the adsorber temperature need not remain absolutely constant under operational conditions. The adsorption dynamics was studied on an apparatus shown in Fig. 6 for which purpose fractional desorption proved suitable (Table 2). A technological scheme for the separation of a krypton-xenon mixture by the adsorption method is described (Fig. 8), which provides for prior xenon enrichment in the mixture (up to 20%) by the method of fractional evaporation, dynamic adsorption, and fractional desorption with prior evacuation of the adsorber. Up to 70-75% of xenon can be separated in this manner. There are 8 figures, 2 tables, and 4 references: 3 Soviet and 1 US. ✓

Card 2/2

EASTOVSKIY, V.G.; ROVINSKIY, A.Ye.

Adsorption method for separating a krypton - xenon mixture.
Khim.prom. no.4:305-310 Je '60. (MIRA 13:8)
(Krypton) (Xenon) (Adsorption)

S/080/60/033/007/016/020

A003/A001

AUTHORS: Fastovskiy, V. G., Rovinskiy, A. Ye.

TITLE: The Adsorption of Hydrocarbon Gases and Their Mixtures

PERIODICAL: Zhurnal prikladnoy khimii, 1960, Vol. 33, No. 7, pp. 1641-1653

TEXT: The separation of mixtures of hydrocarbon gases in order to obtain pure ethylene, propylene, etc. is one of the most important problems of modern chemical technology. The adsorption method is especially effective for separating mixtures of light hydrocarbons. The methods for calculating adsorption separation columns are insufficiently developed. The data for such calculations are incomplete. The isotherms of the adsorption of CH_4 , C_2H_2 , C_2H_4 , C_2H_6 and C_3H_8 at $0-20^\circ\text{C}$ and C_3H_8 at $0-80^\circ\text{C}$ on Al_2O_3 (AG-3) activated coal and also CH_4 , C_2H_2 and C_2H_6 at 20°C on KCM(KSM) silicagel at pressures of $p < 760$ mm Hg are satisfactorily expressed by the potential theory of adsorption; the data for each adsorbent can be correlated by a universal characteristic curve (equation 2) or by a universal isotherm (equation 3). The values of the relative adsorption volatility for the mixtures investigated are constant in the whole range of the content of components, and the sum of the values of the

Card 1/2

S/080/60/033/007/016/020
A003/A001

The Adsorption of Hydrocarbon Gases and Their Mixtures

relative adsorption of the components is in all cases close to unity (equation 5). This circumstance makes it possible to obtain the system of equations (6) and (7), by means of which the equilibrium composition of the adsorbed phase and the adsorbed volumes of the mixture components can be calculated. The relative adsorption volatility of the $C_2H_4 - C_2H_6$ mixture in the case of adsorption on silicagel is 3 times greater than in the adsorption on coal. The efficiency of silicagel in the treatment of gas is lower, but it is more efficient for separating mixtures of such a type than coal. Z. N. Kosova helped in carrying out the measurements. There are 11 graphs, 1 diagram, 2 tables and 8 references: 4 Soviet, 3 English and 1 American.

SUBMITTED: February 16, 1959

Card 2/2

KAGAN, A.M.; FASTOVSKIY, V.G.; ROVINSKIY, A.Ye.

Heat transfer from a fluidized bed of solid particles to the coil
pipe surface. Khim.prom. no.11:790-793 N '61. (MIRA 15:1)
(Fluidization) (Heat—Transmission)

21124

S/120/61/000/002/039/042
E210/E594

26.2191

AUTHOR: Rovinskiy, A. Ye.

TITLE: Liquid Helium Level Indicator

PERIODICAL: Priory i tekhnika eksperimenta, 1961, No.2, pp.190-191

TEXT: J. R. Feldmeier and B. Serin (Rev. Scient. Instrum., 1948, 19, No.12, 916) were the first to use the transition of pure tantalum into the superconducting state at 4.3°K for continuously measuring the level of liquid helium in a closed vessel. It is desirable to reduce to a minimum the dimensions and the mass of the tantalum element and, therefore, the author of this paper considered it advisable to change to some extent the electrical circuit of the instrument. The sensitive element R_3 is made of 0.15 mm diameter tantalum wire, which at 293°K has a resistance of about 3.5 Ohm and at 10°K it has a resistance of about 0.3 Ohm. It is connected into the arm of a bridge formed by the resistances $R_1 = 2.6$ Ohm, $R_2 = 14.5$ Ohm and a regulating resistance $R_3 = 2$ Ohm. The bridge is fed from a 1.5 V battery and a 10 mA milliammeter is connected into the diagonal of the bridge. When the sensitive element is inside the vapours above the liquid level, the bridge is balanced. However, as soon as it is submerged into the liquid

Liquid Helium Level Indicator

21114
S/120/61/000/002/039/042
E210/E594

helium, there is a sharp increase (to 10 mA) of the current in the diagonal. If the sensor is taken out of the liquid helium vessel and a push-button contact is placed into the diagonal of the bridge, a current will flow in the opposite direction which will exceed 25 mA. For protecting the metering instrument, a shunting resistance R_L of 0.55 Ohm is used, which reduces only insignificantly the useful signal but reduces the reverse voltage to 9 mA. Additional automatic reduction of the sensitivity of the bridge is provided for when the probe is taken out of the liquid helium vessel. This is done by connecting in series with the supply source a ballast resistance R_H of nickel wire, which is located on the probe above the sensitive element. When the probe is submerged into the vessel with the liquid, the resistance of the nickel wire is not large and the sensitivity of the level indicator is at its maximum. However, on withdrawing the probe from the vessel the ballast resistance increases, thus reducing the voltage supplied to the bridge. The sensitive element as well as the nickel wire ballast resistance are in the form of 1.5 mm diameter spirals mounted at the end of the probe into channels of a bakelite

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Liquid Helium Level Indicator

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E210/E594.

tube 4 mm diameter.x 1 mm. The length of the probe is determined by the dimensions of the liquid helium vessel. The level of the liquid helium is determined by lowering the probe slowly into the vessel. An approach of the pointer to the zero reading indicates that the probe is at a distance of 40 to 50 mm from the level of the liquid. The instant of submersion of the sensitive element into the liquid can be determined very accurately. After lifting the probe from the liquid, a fast self-heating of the tantalum wire to a temperature above 4.3°K takes place and 1 to 2 sec later the instrument is again ready for carrying out measurements. There are 1 figure and 2 non-Soviet references.

[Abstractor's Note: This is a complete translation.]

ASSOCIATION: Vsesoyuznyy elektrotekhnicheskiy institut
(All Union Electrotechnical Institute)

SUBMITTED: April 10, 1960

Card 3/4

S/096/62/000/003/007/008
E194/E455

22-1700
AUTHORS: Gertsovskiy, V.A., Engineer; Fastovskiy, V.G., Doctor
of Technical Sciences, Professor;
Rovinskiy, A.Ye., Candidate of Technical Sciences

TITLE: Heat transfer during laminar unstabilized flow of
viscous fluid in a short annular duct

PERIODICAL: Teploenergetika, no.3, 1962, 68-70

TEXT: Heat exchange often occurs in equipment with short ducts,
for example in transformers with concentric layer windings and
forced oil cooling and also in recent designs of heat exchanger.
Because of numerous discontinuities in the heat exchange surfaces,
heat transfer takes place over the entire length under hydro-
dynamically and thermally unstable conditions. A brief review of
previous work on this subject, particularly theoretical, is given.
In the present experimental work mean values of heat transfer
coefficient were determined whilst a viscous fluid (transformer
oil) was flowing in a short annular duct with flow conditions that
were hydrodynamically and thermally unstable. The experimental
equipment is described. Oil at known temperature and flow rate
Card 1/3

Heat transfer during laminar ...

S/096/62/000/003/007/003
E194/E455

is passed through the test devices in which the cylinder walls are electrically heated. Four variants of duct were used with different cylinder diameter ratios (d_2/d_1), different equivalent duct diameters d_3 and lengths l . Particular care was taken to prevent heat losses, which can be very severe in short models. The errors are estimated and considered reasonable. The tests covered Reynolds numbers in the range 202 to 2170 and Nusselt numbers in the range 40 to 210. The results are found to lie close to a line corresponding to the following equation

$$Nu = 0.17 Re^{0.5} + 0.7 d_3 / l \left(Pr \frac{d_2}{d_1} \frac{l}{d_3} \right)^{1/3}$$

Values of Nu were also calculated by the method of E. Pohlhausen (Ref. 7: Ztschr. angew. Mat., Mech., Bd. 1, S. 115-121, 1921): the greatest difference between the calculated and experimental values of Nu were $\pm 19\%$, and the mean error of the empirical equation $\pm 15\%$. The intensity of heat transfer in an annular duct heated from one side depends entirely on the properties of the

Card 2/3

Heat transfer during laminar ...

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E194/E455

fluid, its conditions of flow and the duct geometry. The conditions of heating (constant heat input or constant temperature) and the presence of very rough duct walls have no appreciable influence on the rate of heat transfer. There are 3 figures, 2 tables and 8 references: 4 Soviet-bloc and 4 non-Soviet-bloc.

ASSOCIATION: Vsesoyuznyy elektrotekhnicheskiy institut
(All-Union Electrotechnical Institute)

Card 3/3

X

ROVINSKIY, A. Ye.; KOSOVA, Z. N.

Molecular balance for analysis of gases. Zav. lab. 28 no.12:
1529-1530 '62. (MIRA 16:1)

1. Vsesoyuznyy elektrotekhnicheskiy institut im. V. I. Lenina.

(Gases---Analysis)

ZLOBIN, V., polkovnik; ROVINSKIY, A., inzhener-podpolkovnik

Pay attention at a crossing. Voen.vest. 42 no.5:60-61 My
'62. (MIRA 15:11)

(Traffic safety)

EL'KIN, I., inzh.; ROVINSKIY, A., inzh.

Thermal unit for peeling potatoes by steam. Obshchestv. pit. no.7:
33-38 J1 '62. (MIRA 15:10)

(Potato peeling)

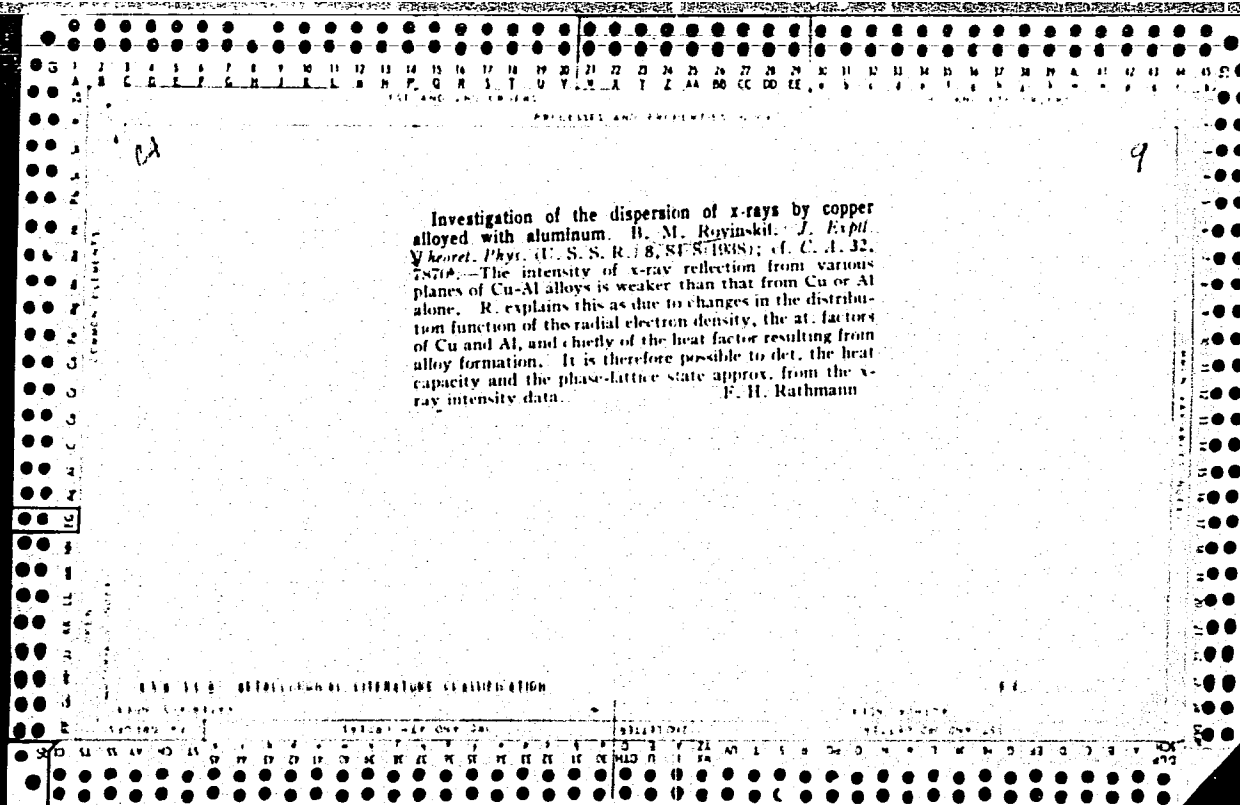
KOSTYUKOVA, Ye.P.; BOVINEKO, P.M.; NYBAKOVA, L.M.

Structural changes in metals under the effect of alternating plastic
deformations. fiz. met. i metalloved. 20 no.2:174-179 Ag '68.
(MIRA 18:9)

1. Institut mashinovedeniya, Moskva.

1ST AND 2ND ORDERS										3RD AND 4TH ORDERS									
PROCESSES AND PROPERTIES INDEX																			
<p><i>m</i></p> <p>*X-Ray Investigation of the Lattice Deformation of Cold-Rolled Copper. R. M. Royvinsky (Zhur. Eksp. Teor. Fiziki, 1937, 7, 963-970; <i>C. Abs.</i>, 1938, 32, 5570).-- [In Russian.] Cf. <i>ibid.</i>, 1938, 8, 961; <i>Met. Abs.</i>, 1939, 6, 517. Comparative data given for the X-ray reflections from annealed and from cold-rolled copper show that with increased rolling the intensity of the reflections decreases, especially for reflections of the higher order. R. concludes that the method may be used for the determination of the change to the amorphous state. Thus, for 3-20% conversion to the amorphous state, departure from the normal lattice positions averages 0-133 Å. Different relative intensity changes point to diverse values of slip in different atomic planes.</p> <p><i>3</i></p>																			
<p>ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION</p> <p>1937-1938</p>																			

✓Investigation of the dispersion of x-rays by copper
B. M. Rovinski, *J. Exptl. Theoret. Phys. (U. S. S. R.)*
7, 927 (1967).—Measurements on the atomic reflection
of x-rays by tempered Cu powders alone and in mixts.
with Al powders prepd. by filing (diam. of particles 10–12 μ)
gave values in good agreement with those found by Brind-
ley (cf. C. A. 30, 4395²) and those calcd. by the method
of Hartree (Hartree) for Cu²⁺ ions. E. H. Rathmann



COMMON LITERATURE		PROCESSING AND PROPERTIES INDEX		COMMON LITERATURE	
1ST AND 2ND ORDERS		1ST AND 2ND ORDERS		1ST AND 2ND ORDERS	
<p><i>*The Influence of Cold Working on the Value of the Parameters of a Crystal Lattice. B. M. Rovinsky (Zhur. Eksp. i Teor. Fiziki (J. Exper. Theoret. Physics), 1938, 8, 711, 94-99).—In Russian.] X-ray patterns of cold-worked</i></p> <p><i>copper were compared with those of annealed copper. The parameter of the lattice does not change within the experimental error (0.002 Å.) in spite of the distortion existing in the cold-worked copper. The lattice distortion caused by cold-working is no geometrical deformation of the lattice, but appears as a disturbance of the field, connected with a change of the electron-density distribution in the atoms of the lattice.—N. A.</i></p>					
<p>ASH-SLA METALLURGICAL LITERATURE CLASSIFICATION</p>					
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1ST ORDER		2ND ORDER		3RD ORDER	
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1ST AND 2ND ORDERS																										3RD AND 4TH ORDERS																									
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ZW																										ZX																									
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RAYEVSKIY, N.P.; VLADIMIROV, B.V.; KOMAROV, N.S., red.; SHCHUCHKIN, N.V.,
red.; SOLOV'YEV, D.I., red.; RABINOVICH, I.P., red.; VASILENKO,
I.F., red.; MODEL', B.I., tekhn. red.

[Theory, design, and manufacture of agricultural machinery] Teoriia,
konstruktsiia i proizvodstvo sel'skokhoziaistvennykh mashin. Moskva,
Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry. Vol.7. [Atlas of
general agricultural machinery parts] Atlas obshchikh detalei sel'khoziai-
stvennykh mashin. 1945. 335 p. (MIRA 14:6)
(Agricultural machinery)

1ST AND 2ND ORDERS																										3RD AND 4TH ORDERS																									
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50		
<p>PROCESSING AND PROPERTIES INDEX</p> <p>21</p> <p>3</p> <p>*The Mosaic Character of the Crystallites in Undeformed Metal. R. M. Royvinsky (Zhur. Tekhn. Fiziki, 1940, 10, (11), 1291-1294). [In Russian]. From a consideration of the geometry of reflection of X-rays in real crystals, a relationship has been established between the dimensions of the interference spots on the X-ray photographs, the angle of the mosaic structure, and the size of the crystallites for given conditions of exposure. It is shown that a positive or negative curve may be ascribed to real crystallites. The angle of the mosaic structure and the size of a series of crystallites in an aggregate of well-annealed metal were measured. A new method for the study of the mosaic structure of real crystallites is proposed, which is based on the use of the "self-magnifying" effect of imperfect crystals on exposure to X-rays. It is established that in annealed undeformed metal certain crystals actually appear to be deformed. N. A.</p>																																																			
<p>AS - 11.4 METALLURGICAL LITERATURE CLASSIFICATION</p>																																																			

*Plastic Deformation and the Dimensions of the Elementary Lattice Cell.
B. M. Rovinsky and T. V. Taganova (*Zhur. Tekhn. Fiz.*, 1947, 17, 1137-1142; *C. Abstr.*, 1950, 44, 3763).—[In Russian]. Observations of the position and diffuseness of X-ray lines in patterns obtained from filings of iron, copper, and the alloys copper 81-92, zinc 18-92 at.%, and copper 82-6, aluminum 17-4 at.%, annealed at different temp. below and above the recrystallization temp., show that the diffuseness of the lines decreases with increasing temp., but the lattice constant remains the same as on full recrystallization. Consequently, plastic deformation does not alter the lattice dimensions. Phase transitions brought about by plastic deformation are not related to an inelastic change of the lattice perturbations revealed by a reduction of the intensity of the scattered lines. The residual lattice constant changes observed by Wood and Smith are not indicative of an inelastic deformation of the cell. The cell is deformed only elastically, as a result of the plastic deformation of the polycrystalline metal.

Translation B-79119, 22 Sep 54

Int. Metallophysics, TsNIChM

Distribution of the electron density in the lattice of metallic copper. V. K. Kritskaya and B. M. Rovinskii. *Zhur. Eksp. Teor. Fis. (J. Expt. Theoret. Phys.)* 18, 785-9 (1948); cf. Ageev and Ageeva, *C.A.* 43, 31g.—The error involved in the method of calc. the electron d. ρ by the three-dimensional Fourier series at a "calcn. temp." higher than the temp. at which the at. scattering factor was detd. (Grimm, Brill, Hermann, and Peters, *Naturwissenschaften* 32, 33 (1944); *C.A.* 33, 467; *ibid.* *C.A.* 35, 1697), in order to obtain better convergence, is evaluated by calcs. on Cu, with 29 and with 28 electrons; in the latter case, ρ should be, correctly, zero. Actually, one finds, in the direction [100], at the calcn. temps. of 2500, 2000, and 1600°, resp., $\rho = 0.174, 0.149, \text{ and } 0.086$ electrons per cu. A. These data measure the error committed at the given calcn. temps. For Cu, with 29 electrons, the true ρ in the interatomic space = 0.085 electrons/cu. A., corresponding to one free electron per atom. The effect of the higher calcn. temp. is illustrated by data showing that the max. ρ , near the lattice points, falls sharply with rising temp., whereas the low ρ values at a distance from the lattice points increase slowly.

N. Thon

Generation of Stresses of the Second Order During Plastic Deformation. (In Russian) B. M. Raynskiy. *Zhurnal Tekhnicheskoi Fiziki* (Journal of Technical Physics), v. 18, Oct. 1948, p. 1273-1281.

By use of simple experimental methods the above were investigated. On the basis of results of X-ray investigation, the presence of two different types of 2nd order stresses in crystals during plastic deformation was established.

M

3

***The Elastic Limit as Established by X-Ray Analysis.**
 B. M. Royitsky and N. V. Tyzhnova (*Zhur. Tekhn. Fiziki*, 1950, 20, (8), 876-882; *Physics Ab.*, 1951, 24, 338).--[In Russian]. Investigation of specimens of C steels 45 and 15 in simple tensile stressing verified that the surface layer of the metal in the elastic zone does not yield prematurely; the elastic limit of the surface layer is exactly the same as that of the specimen as a whole. Nor was premature yielding detected on a specimen with a rough surface, the irregularities of which were of the order of magnitude of the penetration depth of the X-rays. When the elastic limit is exceeded by the specimens, this affects the surface layer likewise and is marked by a reduction of the elastic deformation. It was found that the ratio of the lattice deformation to the normal component of the elastic deformation of the specimen, ϵ_x/ϵ_y , or the ratio of the X-ray stresses to the stresses applied to the specimen, σ_x/σ_y , is determined by the material of the specimen and the micro-relief of its surface.

ROVINSKIY, B.M. (Moskva); RYBAKOVA, L.M. (Moskva)

Relation of hardness, actual flow stresses and residual
deformation in case of a simple stretching. Izv. AN SSSR Otd.
tekh. nauk. Mekh. i mashinostr. no.2:184-187 Mr-Ap '63.
(MIRA 16:6)

(Strains and stresses)

ROVINSKII, B. M.

Investigation of crystallite structures in non-deformed metals. B. M. Rovinskii and L. M. Rybnikova. *Izvest. Akad. Nauk S.S.S.R., Ser. Fiz.* 15, 87-95 (1951).—Four types of crystallites are considered: (1) perfectly shaped crystal, (2) elastically deformed convex or concave crystal, (3) crystallite contg. small domains with a small slippage angle between them, formed according to some rule, (4) same as (3) but the distribution is given by the laws of hazard. Formulas are developed for the size of interference spots for all 4 types of crystallites as a function of conditions during the radiography. A method has been worked out to use 2 perpendicular slits made in 0.1 mm. Ta foil and used in an ionic demountable tube with a Co anode. Measurements made on 99.99% pure Al and tech. W show that the crystals belong to type 3 with R_{A1} (radius of curvature) = 16.5 mm. and $R_W = 10.8$ mm., δ_{A1} (angle of imperfection) = 42.5, $\delta_W = 36.5$. The radius R depends linearly on the size of the recrystd. crystals. Many interference spots show complex structure indicating a secondary mosaic structure. S. Pakswier

ROVINSKIY, B. N.

"Study of Residual X-Ray Strains Produced in Metals by Homogeneous Plastic Deformation. II," Zhur. tekhn. fiz., 21, No.11, pp. 1325-35, 1951

11A 3

The Periodic Distribution of Precipitates in a Copper-Beryllium Alloy After Prolonged Ageing. R. M. Ruvinsky and N. D. Gumbashvile (Dobrye Med. Nauk S.S.S.R., 1951, 76, (3), 399-401; *Fizmatkhoz. Tsentr. No. 16*). [In Russian]. The periodic distributions of sharply coagulated precipitates in crystallites of the main phase of a Cu-Be alloy (contg. 2 wt. % Be) quenched after fusion and working, and aged for ~15 years were studied by X-rays from a Mo anode. The X-ray photographs were examined microscopically, employing a magnification of 60-120. At 60 magnification a spot pattern on a light background appeared on the photographs. At lower exposures, only dark spots on a light background appeared at the lattice points and were distributed periodically at distances of ~0.014 mm. This periodic distribution was confirmed by microscopic examination of a polished section etched with conc. HNO₃. The precipitate disappeared and the specimen became homogeneous and fine grained after heating in a vacuum furnace at 600°C. for 5 hr. and quenching; after ageing for 10 hr. at 650°C., the precipitate re-appeared, being unevenly distributed along the grain boundaries. In the initial α phase (supersaturated solid soln. of Be in Cu) as the result of natural ageing, pptn. of the γ phase (CuBe) occurs, along the crystallographic planes. The initial crystallites of supersaturated solid soln. are originally large and imperfect after heat-treatment; they are probably composed of blocks similar in size and mutually inclined. The crystal lattice in the region of the juncture of these blocks is probably strongly distorted and the precipitate tends to concentrate along the boundaries of the blocks. J. S. G. T.

Evaluation B-78524, 8 Sep 54
Inst. Machine Studies, AS USSR

PA 243T53

ROVINSKIY, B. M.

USSR/Metallurgy - Steel, Crystal Analysis

Oct 52

"Breaking Down of Crystal Blocks and Development of Microstresses in Metal During Plastic Deformation,"
B. M. Rovinskiy, L. M. Rybakova

"Iz Ak Nauk, Otdel Tekh Nauk" No 10, pp 1483-1488

Using X-ray method, investigates processes in metals during plastic deformation. Established breaking down of crystal blocks in steel specimen under tension. This process, intensive in beginning, is further retarded and discontinued at residual deformation of about 12%. Discusses microstresses developed in metal as result of breaking down of crystal blocks, dimensions of crystal blocks, and non-uniformity of lattice period. Submitted by I. A. Oging, Corr Memb, Acad Sci USSR, 15 Jan 52.

243T53

ROVINSKIY, B.M.

Index Aeronauticus
A Review of Technical
Information
Vol. 10 No. 2
Feb. 1954
Metallurgy

158/102

669.35.71 :539.54

Contribution to the Theory of the
Hardening of Metals: 2- Electron
Density and Chemical Defects in the
Lattice of the Solid Solution of
Aluminium in Copper

B.M. Rovinskii ✓

Zh. tech. Fiz.
22(1), 63-66

1952

U.S.S.R.

The changes in the crystal lattice of a metal taking place as the result of the solution in the metal of another element, were studied by the method of calculating the electron density distribution in the crystal lattice and by the analysis of the experimental values of the factor of the atomic scattering of X-rays. Solid solutions of copper with 17.4 atomic % of aluminium, and with 4.9 atomic % beryllium, were studied. Comparison of the results with those obtained on cold-deformed metals showed the effects of alloying and of plastic deformation to be similar. (Bibl. 9)
(Palmer Research Institute Translation (48), 7pp.)

ROVINSKIY, B.M.

✓ 3063. Rovinskii, B. M., and Rybakova, L. M., Structural changes in metals under conditions of creep (in Russian), *Izv. Akad. Nauk SSSR Otd. tekhn. Nauk* no. 9, 1241-1247, 2 plates, Sept. 1953. 62

Investigation was conducted for different residual deformations. Armer Iron (at 400 and 450 C) and Eln-IT Steel (at 575 and 625 C) were used. Analysis of structural changes in crystal grains by quantitative methods alone do not sufficiently reveal the peculiarities to differentiate creep from plastic deformation. Authors used qualitative analysis by x ray. They provided detailed description of the methods and made the following observations. Qualitatively the structural changes produced by creep are analogous to those due to plastic deformation. The changes which correspond to the same residual deformation, in both processes, become less obvious as temperature increases. Results of investigation of the crystal lattice deformation and the development of the microstresses under creep appear to support the conclusions which are based on the comparison of the structural changes due to creep and plastic deformation. Lattice deformation and microstresses occur as residual deformation increases. This is observed under creep as well as under plastic conditions. As temperature increases these processes are slower for creep. Considerably slowed down is the deformation of the lattice pattern. ①

V. A. Valey, USA

ROVINSKIY, B.M.

✓ 3062. Rovinskiy, B. M., and Lluttsu, V. G., Poisson's ratio in stress relaxation (in Russian), *Izv. Akad. Nauk SSSR Otd. tekhn. Nauk* no. 10, 1471-1474, Oct. 1953.

62
①

Working with aluminum and copper and confining relaxation process to room temperatures, author experimentally developed a method of obtaining relaxation curves. The technique is based on determining transverse strain as a function of time while the initial elongation of a specimen remains constant, and then obtaining the Poisson coefficients also as a function of time. The initial longitudinal strain is made up of elastic and plastic strains.

Author makes the following observations:

- (1) During stress relaxation, elastic strain decreases while residual strain increases. By extrapolation a relationship is found for determining Poisson coefficient at the instant of loading and prior to relaxation.
- (2) For elastic strains and small limiting loads, the ratio of transverse compression is probably equal to 0.25.
- (3) For plastic regions the Poisson ratio is 0.5. Technically, this is hardly attained.
- (4) An important technical sense of Poisson coefficient follows from its additive nature. This provides a relation of elastic and plastic strains at the time of securing experimental data.
- (5) Attempts to establish a relation between Poisson coefficients for pure materials and their position in the periodic chart

(OVER)

B. M. ROVINSHI

lacks sound physical support since Poisson coefficients are dimensionless mechanical constants rather than physical properties.

(6) Poisson values for certain materials are not constant when observed experimentally.

Author concludes that experimental Poisson values are determined by the magnitude of applied loading and the relaxation properties of specimens. Author recommends that the existing data in handbooks be considered with certain criticism.

V. A. Valey, USA

3/2

ROVINSKIY, B.M.

USSR

V3391. Rovinskiy, B. M., and Lititsyn, V. G., Structural modifications in aluminum in stress relaxation (in Russian), *Izv. Akad. Nauk SSSR Otd. tekhn. Nauk* no. 11, 1818-1821, Nov. 1953.

Structural changes in metals due to stress relaxation are quite small to be subjected to X-ray diffraction analysis. Authors present a special method which determines the number of interference spots and investigates their character. This is done by x-ray back reflection procedure applied to metals of large crystal composition. Such materials in the unstrained state provide distinct interference spots or reflections. These spots become diffused due to plastic changes in crystallite forms.

Authors describe the experiments and the results, and offer the following conclusions: (1) The number of interference spots on x-ray diagrams for aluminum decreases while specimens are loaded within elastic region. During stress relaxation the number of these spots reappears increasingly. (2) The curve of relative increase of spot numbers is analogous to the curve of stress relaxation. This phenomenon is due to changes in crystallite perfection. (3) After sufficiently completed relaxation, the number of reflections appears to be greater than the original number. Spots of reflections appear to be diffused. Their form and dimensions change. This is due to translations which produce increase in crystallite imperfections and lead to their fracture.

Hence, according to authors, this investigation establishes that the stress relaxation in aluminum at normal temperature is accompanied by slowly progressing irreversible changes of crystallite shapes in the aggregate.

V. A. Valey, USA

gm dk

no matter

KOVINSKIY, D.M.

Chemical Abstr.
Vol. 43 No. 4
Feb. 25, 1954
Electronic Phenomena and Spectra

Structure of crystallites and structural changes in metals upon action on them of mechanical stresses. R. M. Kovinskiy. *Izvest. Akad. Nauk S.S.S.R., Ser. Fiz.* 17, 500-511 (1953). — It follows from metallographic and x-ray dispersion data that in polycryst. materials crystallites should contain a great no. of blocks. However by x-ray diffraction micromethods it can be shown that the crystallites are composed of one or a few blocks in recrystd. Al or W. This discrepancy is attributed to an absorption effect, falsifying x-ray dispersion measurements. The no. of interference spots in x-ray pictures decreases in Al samples with relaxation time at const. load in the elastic range. Upon removal of the load the no. of spots increased to the original value. The half-width of interference lines of steel 15 heated to 870° and held *in vacuo* at 700° and stressed in steps to 20% is plotted vs. the remaining deformation for planes (310) and (211); the av. block size ϵ and the relative inhomogeneity η of the interplane distance d are also plotted as functions of remaining deformation. η is a linear function of deformation between 8 and 20% deformation. In order to investigate the orientation of microcracks in a plastically deformed metal, a narrow x-ray beam was used, collimated by two 0.014-mm. apertures 60 mm. apart. The sample was 170 cm. away from the photographic plate. Samples of pure Cu and Al sheet nonstressed, cold-rolled, and recrystd. were examd. parallel and perpendicular to the direction of rolling. It can be seen that in all conditions the x-ray line appears diffused, but that the amt. of diffusion increased in the cold-rolled samples and depends on the direction of rolling; this is attributed to an orientation of submicrocracks on rolling.

S. Pakswar

Met
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ROVINSKIY, B.M.

3

Metallurgical Abst.
Vol. 21 May 1954
Structure

②
*Scattering of X-Rays by Metals at Very Small Angles
V.B. M. Rovinsky and V. M. Genkin (*Doklady Akad. Nauk
S.S.S.R.*, 105, 89, (4), 673-675).--[In Russian]. The
scattering of X-rays at very small angles ($< 10^\circ$) from rolled
or annealed Cu and Al and sintered Al was studied by micro-
photometer curves of direct and scattered beams. In all
cases a "gas-scattering" distribution was obtained and is
interpreted as due to variation in electron d within the metal
and in defects (micropores and cracks). The form of the curves
is correlated with the dimensions of the defects of the various
metals in the various conditions. 6 ref. (Translated by the
U.S. National Science Foundation (NSF-Tr-84)).- D. M. P.

[Handwritten signature]

ROVINSKIY, B.M.

U.S.S.R.

✓ The mechanism of relaxation of strains in metals. B. M. Rovinskii. *Izvest. Akad. Nauk S.S.S.R., Otdel. Tekh. Nauk* 1954, No. 2, 67-74. In pure Al or Cu, the strain-relaxation process is expressed for cases of simple relaxations at room temp. by the formula $\sigma = \sigma_0 \exp(-k_1 t^p)$, where σ and σ_0 are the strains at t min., p = the plasticity index and k_1 = the relative rate of strain relaxation. A similar formula can be derived for a relaxation process caused by diffusional action proceeding spontaneously in a cryst. substance, where the process is an elastic-plastic process. At higher temps. the process changes gradually into an elastic-viscous process, which proceeds by diffusion and by a mutual displacement or viscous flow of the cryst. structure elements: crystallites, their fragments, and aggregations. As a general rule, the entire relaxation process is a result of a superposition of all 3 processes. W. A. S.

m qf

ROVINSKIY, B.M.

116/112

539.4.015 :669.71 :669.3

The Effect of Grain Size on
Stress Relaxation in Pure Metals

Izv. Akad. Nauk, Otd.
Tekh. Nauk

(5)91-94

1954

U.S.S.R.

V.G. Lyutsau, B.M. Rovinsky

Relaxation stability of properly annealed pure Al (99.99 per cent) and pure Cu (99.92 per cent) increases with grain coarsening. Relaxation curves can be described with a

considerable degree of precision by the equation of elastic-plastic process. On the whole, relaxation stability of pure metals at room temperature can be quantitatively gauged with the aid of plasticity parameter 'p' and relative velocity of stress relaxation which are determined by the dimensions of structural elements. (Bibl.4)

USSR/Engineering - Metallurgy

FD-1126

Card 1/1 Pub. 41-7/17

Author : Rovinskiy, B. M. and Lyuttsau, V. G., Moscow

Title : Effect of previous plastic deformation on stress relaxation in pure metals

Periodical : Izv. AN SSSR. Otd. tekhn. nauk 6, 57-60, Jun 1954

Abstract : Gives results of experiment conducted on specimens of pure aluminum and copper in order to determine effect of previous plastic deformation on stress relaxation. Table; graphs. Three references.

Institution :

Submitted : July 10, 1954

ROVINSKIY, B. M.

62 ✓ The Behaviour of a Thin Surface Layer of Metal in the Zone of Stress Concentration. V. I. Mokeeva and B. M. Rovinsky (Izvest. Akad. Nauk S.S.S.R., 1954, [Tekhn.], (10), 14-22).—[In Russian]. The phenomena of plastic flow were investigated in smooth and notched cylindrical steel specimens in order to determine the relation between the Y.P. of surface layers in the zone of stress concentration and in smooth cylindrical specimens. The detn. of the U.T.S. and Y.P. was carried out by the method of decrease in definition of X-ray-diffraction patterns and by measuring the lattice parameter at various stages of deformation. The X-ray photographs were taken during the deformation of specimens. The behaviour of the thin surface layer in the triangular notch was different from the behaviour of the surface layer of a smooth cylindrical specimen. The plastic deformation in smooth specimens proceeded unevenly by jumps, whereas in the notch area it took place slowly and uniformly.—S. K. L.

①

USSR/Metallurgy - Stresses in metal crystals

FD-1011

Card 1/1 : Pub. 153 - 15/24

Author : Rovinskiy, B. M., and Rybakova, L. M.

Title : Magnitude of the crystalline blocks and of the initial micro-stresses in nondeformed metals

Periodical : Zhur. tekhn. fiz., 24, 1069-1076, Jun 1954

Abstract : Determine the magnitude of blocks by using inverted x-ray photographs in the camera with special slit device which give a very narrow beam of rays with small divergence and fine focussing. As a consequence, the width of the interference lines are practically independent of geometric conditions. By this method, various well annealed metals (steel 15 and 48, aluminum, wolfram) are investigated and results tabulated. Conclude from interference spots and lines that nondeformed metals the crystals are a mass of simias blocks or are a combination of extremely few blocks.

Institution : -

Submitted : August 10, 1952

Rovinskiy, B.M.
USSR/Physical Chem. Crystals

B-5

Pub Jour : Ref Zhur - Khimiya, No 7, 1957, 22120

Author : B. M. Rovinskiy

Inst : Not given

Title : The dependence of mechanical properties of solid bodies on the atomic interaction in the lattice.

Orig Pub : Izv. AN SSSR, Otd tekhn. n. 1956, No 9, 55-64

Abstract : It is shown as a result of the analysis of the data supplied by available literature that the mechanical properties of pure metals, inter-metallic compounds, salts, tempered and annealed steels, solid solutions of metals and cold-deformed metals, are functions of the hardness-coefficient $K_C = c \cdot 4\pi^2 \cdot k^2 M^2 / h^2$, where c is a constant, depending on the type of ties found in the parts of the lattice, θ characteristic temperature according to Debay, h and k constants of Plank and Boltzmann.

Card 1/1

-36-

ROVINSKIY, B.M.

Effect of Alloying on the Relaxation of Stresses in Metals at Room Temperature. V.G. Lyutskanov and B.M. Rovinsky (Izvest. Akad. Nauk S.S.S.R., 1958, [Tekhn.], (11), 99-98). — [In Russian]. Specimens were prepared from Cu (purity 99.92 wt. %) contg. 3, 6, and 8% Al (purity 99.99 wt. %). Tests were made on 3 samples of each alloy. A preliminary longitudinal elastic deformation of 0.080% was given, and the experiments lasted for ~500 hr. Relaxation was in the order $Al \rightarrow Cu \rightarrow$ alloys of Cu and Al. Increase in Al content caused a decrease in the relaxation. The rate of relaxation depends not on the concentration and nature of the solid soln., but on the amount of preliminary deformation. Alloying alters the bond strength of the lattice which changes relaxation and hardness. Thus relaxation can be used as an estimate of the high-temp. strength and the hardness of a metal. 8 ref. — N. E. H.

2-7
1-4E2C

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ROVINSKIY, B.M.

5
The change of aluminum structure at a small plastic deformation and creep. B.M. Rovinskiy and L. M. Rikova. *Bull. Acad. Sci. U.S.S.R., Phys. Ser.* 20, 584-91 (1956) (English translation). See *C.A.* 51, 982g. B.M.R.

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ROVINSKIY, B.M.

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Stage ✓

Structural changes in pure metals in the process of stress relaxation. B. M. Rovinskiy and V. G. Lyuttsau. Invest. Akad. Nauk S.S.S.R., Ser. Fiz. 20, 634-8 (1950); cf. C.A. 49, 8790d. The change of x-ray spots obtained by using cross and radially shaped slots was observed on Al (99.99%) and Cu (99.92%), subjected to a small longitudinal deformation for 500 hrs. The pictures show irreversible changes in crystallite structure and also changes in their mutual orientation, caused by rotations and displacements along viscous crystal boundaries. S. Pakswar

12

VARY

ROVINSKIY, B.M.

E-8

USSR / Structure of Deformed Materials.

Abs Jour : Ref Zhur - Fizika, No 4, 1957, No 9387

Author : Rovinskiy, B.M., Rybakova, L.M.

Inst : Institute of Machinery Research, Academy of Sciences USSR

Title : Change in Substructure of Aluminum at Small Plastic Deformation and in Creep.

Orig Pub : Izv. AN SSSR, ser. fiz., 1956, 20, No 6, 646-649

Abstract : Results are given on a detailed qualitative X-ray analysis of the variation in the substructure of large grain pure aluminum upon small plastic deformation under conditions of simple tension and creep at room temperature. The procedure used in the work was described by the authors earlier (Izv. AN SSSR, ser. fiz., 1951, 15, 87). The investigation was carried out in apparatus for small stretching of the specimen and for creep directly on a table of a dismountable ionic X-ray tube. Using a collimation de-

Card : 1/2

USSR/ Laboratory Equipment. Apparatuses, Their Theory, Construction and Application. I

Abs Jour: Referat. Zhur.-Khimiya, No. 3, 1957, 27325.

Author : B.M. Rovinskiy, V.G. Lyuttsau, A.I. Avdeyenko.

Inst : Academy of Sciences of USSR.

Title : Needle-Shaped X-Ray Microprojector.

Orig Pub: Izv. AN SSSR, ser. fiz., 1956, 20, No. 7, 843-852.

Abstract: The conditions of obtaining an enlarged picture by the shadow method are formulated. An original construction of a microprojector with a point source of x-rays in the shape of the point of the anode needle (diameter of the focus spot = 0.6μ) bombarded by electrons is proposed. It is found that the resolution of the microprojector is 0.6μ .

Card 1/1

ROVINSKIY, B.M.

Phys. Camera obscura for shadow x-ray microscopy. B. M. Rovinskiy and V. G. Lyutskanov. *Izvest. Akad. Nauk S.S.S.R., Ser. Fiz.* 20, 853-6 (1956). This camera has a small opening of $0.5-1 \mu$, made in an Au foil $0.02-0.03 \text{ mm}$ thick and annealed at $500-600^\circ$ with an electrolytically sharpened steel needle, by using a microhardness test app. The Au foil is fixed by a 1μ layer of Zapon lacquer to a Pb plate. During exposure the camera, together with the sample and the photographic plate, rotate around the optical axis of the camera. The magnification is 100 and can be increased to 1000 with a 10 fold photographic magnification. The resolution is better than 1μ . S. Pakswar

Rovinskiy, B. M.

AUTHORS: Rovinskiy, B. M., and Mokeyeva, V. I. 126-2-18/35

TITLE: Behaviour of the surface layer of metals after machining and heat treatment. (Povedeniye poverkhnostnogo sloya metallicheskih tel, podvergnutykh mekhanicheskoy i termicheskoy obrabotke).

PERIODICAL: Fizika Metallov i Metallovedeniye, 1957, Vol.5, No.2, pp. 331-339 (USSR)

ABSTRACT: The surface layer of metallic bodies after machining assumes completely different mechanical properties than the core of the metal. The change of the hardness and the other mechanical properties of the surface layer is due to the fact that during machining the crystal grain becomes broken up, micro-stresses occur, the crystal lattice becomes distorted and the phase composition changes. It is usually assumed that annealing above the recrystallization temperature liquidates the damage occurring during machining. However, it is shown in this paper that even after annealing at a high temperature, the layer of the metal adjacent to the surface will behave differently during loading than the metal body as a whole. Some idea on the behaviour of the surface layer can be

Card 1/5 gained from the diagram "load-lattice deformation", since

126-2-18/35

Behaviour of the surface layer of metals after machining and heat treatment.

by means of this diagram it is easy to establish the dependence of the average deformation of the crystal lattice in a thin layer (about 0.02 mm) on the average stress throughout the cross section in the case of simple tensile stress (Refs. 1 to 3). A typical "load-lattice deformation" diagram is reproduced in Fig.1, p.331. This diagram comprises a well pronounced rectangular section OA corresponding to the range of validity of the Hook law; this is followed by a non-linear section AB corresponding to stresses beyond the limit of elasticity and, finally, by a section BC corresponding to the range of stress relaxation. Of great interest is the nature and conditions of occurrence of the residual deformation of the lattice. However, neither the scientific nor the practical importance of the phenomena detected by the diagram have been fully evaluated or studied in detail. In this paper the authors attempt to elucidate some of the features of the behaviour of the surface layer in a wider sense than was done in their earlier work using fundamentally the same experimental technique as was described in their earlier

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work (Refs.4 and 5). The results are described and discussed. The test data obtained for ten specimens of the Steels 45 and 40 X (0.4-0.5% C, 0.17-0.37% Si, 0.5-0.8% Mn, max 0.3% Cr, max 0.3% Ni, max 0.045% S and max 0.045% P and 0.35 to 0.45% C, 0.17-0.37% Si, 0.50-0.80% Mn, 0.80-1.10% Cr, max 0.4% Ni, max 0.04% S, max 0.04% P respectively) are entered in Table 1. These show that the inclination angle on the diagrams of the individual specimens of the two grades of steel do not have a constant value in spite of the fact that each series of specimens were produced from a single grade of steel and were heat treated in exactly the same way. In the surface layer of five out of six polished specimens the plastic deformation sets in earlier than the plastic deformation throughout the cross section; the graph, Fig.3, shows this quite clearly. Fig.4 shows diagrams for specimens annealed at 600°C for one hour. The graph, Fig.5, shows the diagram of a specimen with a hyperbolic recess whereby the lattice deformation was determined in the apex of the recess. The obtained experimental data indicate that the surface layer, which

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during machining assumes definite mechanical properties and a definite structure, loses these properties and structure during annealing in vacuum at a temperature above the recrystallization temperature but it assumes new properties, which are clearly pronounced on the diagrams "loading-lattice deformation". To a lesser extent these new properties appear after one hour annealing at 600°C , probably due to the insufficient effect of the temperature and time on their formation. Criteria of the state of the surface layer are: the inclination angle α of the straight line Hook section of the diagram "load-lattice deformation" and the inclination angle α' of the straight line section of the diagram during load relief. The surface layer behaves differently during loading, depending on the smoothness of the surface, the conditions of machining and forming and the regime of subsequent heat treatment. The plastic deformation of the surface layer on polished specimens annealed at 750°C occurs at a lower average stress than that required for plastic deformation to occur throughout the cross section or on analogous

Card 4/5 rough surface specimens; in the case of annealing at 600°C

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plastic deformation takes place simultaneously throughout the cross section for polished as well as for rough surface specimens. The ratio of the limit elasticity of the entire specimen to that of its surface layer expresses the effect of stress concentration in the surface layer.

There are 5 figures, 2 tables and 9 references, 7 of which are Slavic.

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Card 5/5

AUTHORS

Luttsau, V.G., and Rovinskiy, B.M.

32-8-31/61

TITLE

The Construction of Relaxation Curves by the Method of Inverted X-Ray Photographs at Elevated Temperatures. (Polucheniye relaksatsionnykh ^{krivyykh} metodom obratnykh rentgenosnykh yemok pri povyshennykh temperaturakh).

PERIODICAL

Zavodskaya Laboratoriya, 1957, Vol. 23, Nr 8, pp. 961 - 963 (USSR.).

ABSTRACT

The above-mentioned method is here compared to an earlier described method, where the first is based on the construction of relaxation curves of stresses according to the cross section of the samples and the second is performed by means of precise inverted X-ray photographs. In both cases the Mitchell apparatus is used, but in the second case the deformation is determined radiographically in a section lying close to the surface. A comparison of the relaxation curves obtained by both methods permits to determine several mechanical properties of the relaxation stresses. A description of the apparatus for obtaining the relaxation curves according to inverted X-ray photographs is given. In the section of the book entitled "Research results" examples are given and compared for the construction of relaxation curves of the elastic lattice deformation in pure copper and aluminum samples according to both methods. In the conclusion it is stated that the complete stability of the initial longitudinal deformation and the possibility to obtain additional data on structure modifications

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The Construction of Relaxation Curves by the Method of Inverted X-Ray Photographs
at Elevated Temperatures.

(recrystallization, phase transformations) in the stress relaxation process represent advantages of the radiographic method. A comparison of the relaxation curves obtained by both methods makes it possible to investigate the details of the mechanism of the relaxation process. (4 illustrations, 3 references).

ASSOCIATION

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(Institut mashinovedeniya Akademii nauk SSSR.).

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PA - 2131

AUTHOR: ROVINSKIY, B.M., LYUTTSAU, V.G.
 TITLE: The Relaxation of Orientated Microvoltages. I. (Relaksatsiya
 oriyentirovannykh mikronapryazheniy. I. Russian).
 PERIODICAL: Zhurnal Tekhn. Fiz., 1957, Vol 27 Nr 2, pp 345 - 350 (U.S.S.R.)
 Reviewed: 4 / 1957
 Received: 3 / 1957

ABSTRACT:

A fully elastic deformation of crystalline bodies is directly determined only by measuring the deformation of the lattice. For this reason the authors investigated the relaxation of the elastic deformation of the lattice by means of the radiographic method. On this occasion the relaxation of the orientated microvoltages and not the initial macroscopic voltages were investigated. These voltages are orientated in the direction of the force by means of which the plastic deformation of the body was carried out. At first the method of investigation is described. The samples consisted of pure metal: Aluminium 99.99% and copper 99.92%. The average size of the grain was about 0.02 mm in the case of aluminium and 0.05 mm in the case of copper. Measuring results are shown together in a table and besides four diagrams are attached.

By accurate measurements sufficiently accurate relaxation curves were obtained. The relaxation curves of the elastic remaining deformation of the lattice in pure metals (aluminium and copper) at

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57-9-32/40

Rovinskiy, B.M.

AUTHOR: Rovinskiy, B.M., Lyuttsau, V.G.

TITLE: The Relaxation of Non-Oriented Microstrains. Part II
(Relaksatsiya neoriyentirovannykh mikronapryazheniy. II)

PERIODICAL: Zhurnal Tekhn. Fiz., 1957, Vol. 27, Nr 9, pp. 2162 - 2166 (USSR)

ABSTRACT: The curves on the restoration of the original width of the diffraction lines on the X-ray pictures of plastically deformed pure metals (aluminum and copper) at room temperature are dealt with. The samples consisted of 99,99 % Al and 99,92 % Cu with an average size of grain of about 0,02 and 0,05 mm. The modification of the lines in the course of time of the restoration of the breadth of lines is essentially due to the relaxation of the non-oriented microstrains. The curves obtained for the restored breadth of line can, however, not be expressed by the relaxation equations of the oriented microstrains and those for the relaxation of macrostrains. This is due partly to the heterogeneity of the nonoriented microstrains and possibly also to the increase of block measurements during the relaxation process of the microstrains. This is due to the low degree of accuracy of measuring the breadth of lines in comparison to the measuring accuracy of the lattice period. There is 1 table, 6 figures, and 2 Slavic references.

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